

Due Date: March 31, 2008

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:)	
)	
Inventor: William C. Y. Lee et al.)	Examiner: Sharad K. Rampuria
)	
Serial #: 09/625,626)	Group Art Unit: 2617
)	
Filed: July 26, 2000)	Appeal No.: _____
)	
Title: NETWORK ENGINEERING IN)	
<u>A WIRELESS NETWORK</u>)	

REPLY BRIEF OF APPELLANTS

MAIL STOP APPEAL BRIEF - PATENTS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

I. INTRODUCTION

In accordance with 37 C.F.R. §41.41, Appellants' attorney hereby submits the Reply Brief of Appellants in response to the Examiner's Answer dated January 29, 2008.

No fee is required for filing this Reply Brief. However, the Office is authorized to charge any necessary fees or credit any overpayments to Deposit Account No. 50-0494 of Gates & Cooper LLP.

II. ARGUMENTS

In the Answer, the Examiner essentially reiterates the prior rejections, but also includes new arguments using somewhat different citations to the references. In this regard, this Reply Brief of Appellants incorporates by reference herein the entirety of the previously filed Brief of the Appellants. Moreover, additional arguments are also presented below.

A. Arguments directed to the first grounds for rejection: Whether claims 1, 3-10, 12-16, 18-25, and 27-30 are obvious under 35 U.S.C. §103(a) over U.S. Patent No. 5,095,500 (Tayloe) in view of U.S. Patent No. 5,303,240 (Borras).

1. Independent claims 1 and 16

The Examiner's Answer again asserts that claims 1, 3-10, 12-16, 18-25, and 27-30 are obvious under 35 U.S.C. §103(a) over U.S. Patent No. 5,095,500 (Tayloe) in view of U.S. Patent No. 5,303,240 (Borras). The Examiner's Answer also asserts the following:

In response to appellant's argument (in section E of appeal-brief, pg. 6 and further on pg. 10) that the references fail to show "Collecting and analyzing information from the wireless network into a collection and analysis system coupled to the wireless network, wherein the information includes location information on a plurality of mobile transceivers communicating with the wireless network; and optimizing the wireless network's operation from a network control system coupled to the wireless network by intelligently steering radio frequency (RF) signal beams transmitted from the wireless network in the direction of one or more of the plurality of mobile transceivers using the collected and analyzed information." It is noted that the claimed limitations are rejected by the combination of Tayloe and Borras. Wherein Tayloe clearly discloses "As base stations 101, 106, and 111 communicate with device 100, information concerning the mobile unit location and the resultant signal quality is gathered and passed along lines 104, 109, or 114 to the Operation Maintenance and Control Unit (OMCU) 116. ... various system parameters such as: transmitter power, transmitter frequency, frequency assignments, or software algorithms ... Careful review of FIG. 1 reveals that the evaluation tool 117 is mated with the OMCU. The evaluation tool performs the required statistical analysis and correlation which relates the mobile unit's position with the resultant signal quality. Armed with this information, the system operator can easily plan, diagnose, or optimize the electromagnetic coverage of that communication system. (please see Tayloe, Col. 5; 25-52), although the only omitted part from Tayloe is the wireless network by intelligently steering radio frequency (RF) signal beams transmitted from the wireless network in the direction of one or more of the plurality of mobile transceivers using -the collected and analyzed information, however in view of the fact, the utilizing of Borras is for teaching the technique of using a directional antenna provides increased system gain in a limited direction by reducing the system gain in other directions. The use of a plurality of antennas and/or a means of steering a given number of antennas in addition to measuring signal quality (in a given direction) would allow the selection of a particular direction to achieve improved system gain. Antenna arrays are typically used to steer an antenna beam electronically. The array typically consists of antenna elements such as dipoles or slots, waveguides or horns, and microstrip antennas or other configurations. These arrays can be electronically steered by phase shifting the reception or transmission signal. (see Borras, abstract and col. 1, 36-48).

Furthermore, Borrás teaches “the transceiver, (preferably the portable communication unit) would scan by “sweeping” the antenna (404) preferably using a scanning means and then measure the signal quality in each antenna direction (406) preferably using a signal quality measuring means. The best antenna direction is selected (408) preferably using a steering means which steers the antenna in the direction providing the best signal quality.” (Borrás, Col. 4; 53-61), which corresponds to the claimed limitation as “optimizing the wireless network’s operation from a network control system coupled to the wireless network by intelligently steering radio frequency (RF) signal beams transmitted from the wireless network in the direction of one or more of the plurality of mobile transceivers using the collected and analyzed information.” Thus, it is evidently, preferably using a scanning and then measure the signal quality in each antenna direction preferably using a signal quality measuring, (Applicant’s Specification (filed on 07/26/2000), Page. 14; 12-18), that definitely, edify by the combination of TAYLOE and BORRAS. Hence, it is believed that combination of TAYLOE and BORRAS teaches the claimed limitations.

In consequence, the combination of Tayloe and Borrás undoubtedly (since, the claimed limitations are still broad), teaches the optimizing the wireless network’s operation from a network control system coupled to the wireless network by intelligently steering radio frequency (RF) signal beams transmitted from the wireless network in the direction of one or more of the plurality of mobile transceivers using the collected and analyzed information, as explained above.

In response to appellant’s argument (in second paragraph of pg. 11 in appeal-brief) that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Tayloe clearly discloses “The evaluation tool performs the required statistical analysis and correlation which relates the mobile unit’s position with the resultant signal quality ... Armed with this information, the system operator can easily plan, diagnose, or optimize the electromagnetic coverage of that communication system. (Tayloe, Col. 5; 25-52), although the only omitted part from Tayloe is the wireless network by intelligently steering radio frequency (RF) signal beams transmitted from the wireless network in the direction of one or more of the plurality of mobile transceivers using the collected and analyzed information, however in view of the fact, the utilizing of Borrás is for teaching the technique of using a directional antenna provides increased system gain in a limited direction by reducing the system gain in other directions. The use of a plurality of antennas and/or a means of steering a given number of antennas in addition to measuring signal quality (in a given direction) would allow the selection of a particular direction to achieve improved system gain. (see Borrás (abstract and col. 1; 36-48), thus by evaluating the best signal quality by steering the antenna, which is in

the same field of endeavor as Tayloe. Therefore, one skill in the art would recognize the amalgamation of the above two references is proper.

Also, in response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Appellants' attorney disagrees with this analysis.

In Tayloe, information concerning the mobile unit location and the resultant signal quality is gathered and passed to the Operation Maintenance and Control Unit (OMCU), which includes an evaluation tool that performs statistical analysis and correlation, which relates a mobile unit's position with resultant signal quality. However, the evaluation tool of Tayloe merely presents computer generated graphical or tabular representations of the characteristics of the electromagnetic coverage to a system operator via CRT displays, such that, armed with this information, the system operator can plan, diagnose, or optimize the electromagnetic coverage of that communication system. Consequently, Tayloe suggests that the electromagnetic coverage of the network is static, and is only manually changed by the system operator, using the output of the evaluation tool. Tayloe teaches nothing about dynamically changing the electromagnetic coverage of the network, in a manner similar to Applicants' invention, wherein the wireless network's operation is optimized by intelligently steering RF signal beams in the direction of mobile transceivers using location information collected from the mobile transceivers.

In Borrás, an antenna direction for a portable communications unit is selected by sweeping the antenna and scanning for the direction of the best signal quality when communicating with the wireless network. However, the information collected by the portable communications unit of Borrás from its single antenna is signal quality information, not location information. Consequently, Borrás merely suggests that measured signal quality can be used to change the phase of a carrier signal for a directional antenna in a radio. Borrás teaches nothing about collecting and analyzing location information from mobile transceivers in a wireless network, in a manner similar to Applicants' invention, wherein the wireless network's operation is optimized by intelligently steering RF signal beams in the direction of mobile transceivers using the location information collected from the mobile transceivers.

As a result, the combination of Tayloe and Borrás does not teach or suggest all the limitations of Appellants' independent claims 1 and 16. In addition, Appellants' attorney submits that it is the Office Action itself that provides the motivation to combine Tayloe and Borrás, and that one of ordinary skill in the art would not assert that such a combination teaches or suggests Appellants' claimed invention. Thus, Appellants' attorney submits that independent claims 1 and 16 are allowable over Tayloe and Borrás.

2. Claims 3 and 18

With regard to dependent claims 3 and 18, which recite that the information further includes one or more types of information selected from a group comprising Hand Off (HO) information, Power information, Measurements, and System Parameters from the wireless network, these claims stand or fall with independent claims 1 and 16.

3. Claims 4 and 19

With regard to dependent claims 4 and 19, which recite that the information is collected when certain defined thresholds are triggered, the Office Action asserts that these limitations are described in Borrás at col. 5, lines 19-25, which describes a portable communications unit controlling handoffs by measuring signal quality. Appellants' attorney disagrees. At the indicated location, Borrás says nothing about the wireless network collecting location information from mobile units, when certain defined thresholds are triggered.

4. Claims 5 and 20

With regard to dependent claims 5 and 20, which recite that the optimizing step or network control further comprises the step of or means for dynamically allocating radio frequency (RF) signal power in the wireless network based on the collected and analyzed information, the Office Action asserts that these limitations are described in Tayloe at col. 5, lines 25-37, which describes mobile unit location and signal quality information being gathered and sent to the OMCU. Appellants' attorney disagrees. At the indicated location, Tayloe says nothing about the wireless network dynamically allocating radio frequency (RF) signal power based on collected and analyzed location information.

5. Claims 6 and 21

With regard to dependent claims 6 and 21, which recite that the dynamically allocating step or means for dynamically allocating further comprises the step of or means for dynamically assigning RF signal power to cells, sectors within cells, and mobile transceivers based on the collected and analyzed information, the Office Action asserts that these limitations are described in are described in Tayloe at col. 5, lines 25-37, which describes mobile unit location and signal quality information being gathered and sent to the OMCU. Appellants' attorney disagrees. At the indicated location, Tayloe says nothing about the wireless network dynamically assigning RF signal power to cells, sectors within cells, and mobile transceivers based on collected and analyzed location information.

6. Claims 7 and 22

With regard to dependent claims 7 and 22, which recite that the optimizing step or network control further comprises the step of or means for setting dynamic dedicated handoff (HO) thresholds for individual mobile transceivers based on the collected and analyzed information, the Office Action asserts that these limitations are described in Borrás at col. 5, lines 19-25, which describes a portable communications unit controlling handoffs by measuring signal quality. Appellants' attorney disagrees. At the indicated location, Borrás says nothing about the wireless network setting dynamic dedicated handoff (HO) thresholds for individual mobile transceivers based on collected and analyzed location information.

7. Claims 8 and 23

With regard to dependent claims 8 and 23, which recite that the individual mobile transceivers each have a unique, assigned HO (hand off) threshold, the Office Action asserts that these limitations are described in Borrás at col. 5, lines 19-25, which describes a portable communications unit controlling handoffs by measuring signal quality. Appellants' attorney disagrees. At the indicated location, Borrás says nothing about individual mobile transceivers each having a unique, assigned HO (hand off) threshold, in the context where the wireless network sets dynamic dedicated handoff (HO) thresholds for individual mobile transceivers based on collected and analyzed location information.

8. Claims 9 and 24

With regard to dependent claims 9 and 24, which recite that the optimizing step or network control further comprises the step of or means for performing handoffs for individual mobile transceivers based on their unique, assigned HO (hand off) threshold and their location, the Office Action asserts that these limitations are described in Borrás at col. 5, lines 19-25, which describes a portable communications unit controlling handoffs by measuring signal quality. Appellants' attorney disagrees. At the indicated location, Borrás says nothing about performing handoffs for individual mobile transceivers based on their unique, assigned HO (hand off) threshold and their location, in the context where the wireless network sets dynamic dedicated handoff (HO) thresholds for individual mobile transceivers based on collected and analyzed location information.

9. Claims 10 and 25

With regard to dependent claims 10 and 25, which recite that the performing step or means for performing comprises the step of or means for performing handoffs for individual mobile transceivers in order to minimize interference levels, these claims stand or fall with dependent claims 9 and 24.

10. Claims 12 and 27

With regard to dependent claims 12 and 27, which recite that the intelligently steering step or means for intelligently steering further comprises the step of or means for intelligently forming an RF signal beam based on the collected and analyzed information, these claims stand or fall with independent claims 1 and 16.

11. Claims 13 and 28

With regard to dependent claims 13 and 28, which recite that claims 1 and 16 further comprise the step of means for identifying and resolving problems using the collected and analyzed information, these claims stand or fall with independent claims 1 and 16.

12. Claims 14 and 29

With regard to dependent claims 14 and 29, which recite that the identifying and resolving step or means for identifying and resolving further comprises the step of or means for identifying problems in the wireless network, and correlating the identified problems with the collected and analyzed information, these claims stand or fall with dependent claims 13 and 28.

13. Claims 15 and 30

With regard to dependent claims 15 and 30, which recite that the correlating step or means for correlating further comprises the step of or means for correlating the identified problems with mobile transceiver location information from the collected and analyzed information, these claims stand or fall with dependent claims 14 and 29.

B. Arguments directed to the second grounds for rejection: Whether claims 2 and 17 are obvious under 35 U.S.C. §103(a) over U.S. Patent No. 5,095,500 (Tayloe) in view of U.S. Patent No. 5,303,240 (Borras), and further in view of Grimes, U.S. Patent No. 5,479,482 (Grimes).

The Examiner's Answer again asserts that claims 2 and 17 are obvious under 35 U.S.C. §103(a) over Tayloe and Borras and further in view of U.S. Patent No. 5,479,482 (Grimes). The Examiner's Answer, however, also asserts the following:

In response to appellant's argument for dependent claims 2 and 17, (in third paragraph of pg. 11 in appeal-brief and section G, on pg. 14) that the combination of Tayloe, Borras and Grimes fails to show "the location information comprises E911 location information" in the same context as Appellants' invention. It is noted that the Grimes clearly discloses "In accordance with the invention, if the emergency call is from cellular terminal 133, cellular terminal 133 determines its geo-coordinates using an attached GPS device and transmits these coordinates along with the emergency call information to cellular switching system 134. In response, cellular switching system 134 transmits this information to PSAP 117. PSAP 117 is responsive to the geo-coordinate information to access GPS computer 124 via multiplexer 126. GPS computer 124 maintains a database that defines the conversion from geo-coordinates to location information in terms of municipal and rural designations. GPS computer 124 can be an integral part of PSAP 117 or can be an externally located computer such as ALI computer 119. In another embodiment of the invention, which is illustrated in FIG. 2, cellular switching system 134 has an attached GPS computer 124. Upon receiving the geo-coordinates from cellular terminal 133, cellular switching system 134

accesses GPS computer 124 obtains the location information and transmits that information to PSAP 117 The following paragraphs first describe the conventional manner in which a PSAP provides emergency service when calls are received from a wired telephone and, then, describes how emergency service is provided when the emergency call is from a cellular terminal.” (Col. 4; 23-44). Thus, it is evidently, the location information comprising emergency location information, read as E911 location information, (Applicant’s Specification (filed on 07/26/2000), Page.5; 16-24), that definitely, edify by the combination of Tayloe, Borrás and Grimes. Hence, it is believed that combination of Tayloe, Borrás and Grimes teaches the claimed limitations.

With the intention of that explanation, it is believed and as enlighten above, the refutation are sustained.

Appellants’ attorney disagrees with this analysis.

Appellants’ invention, as set forth in dependent claims 2 and 17, which are dependent on independent claims 1 and 16, respectively, stand or fall with claims 1 and 16. Dependent claims 2 and 17 are submitted to be allowable over Tayloe, Borrás and Grimes in the same manner as independent claims 1 and 16, because they are dependent on independent claims 1 and 16, respectively, and thus contain all the limitations of independent claims 1 and 16.

In addition, as noted above, the combination of Tayloe and Borrás do not teach or suggest Appellants’ independent claims. Moreover, the inclusion of Grimes does not overcome the deficiencies of Tayloe and Borrás. Instead, Grimes merely refers to the provisioning emergency services in a wireless network, but does not teach or suggest that “the location information comprises E911 location information,” in the context of operating a wireless network, where the location information for mobile transceivers is collected and analyzed, in order to intelligently steer RF signal beams transmitted from the wireless network in the direction of the mobile transceivers.

As a result, the combination of Tayloe, Borrás and Grimes does not teach or suggest all the limitations of Appellants’ dependent claims 2 and 17. In addition, Appellants’ attorney submits that it is the Office Action itself that provides the motivation to combine Tayloe, Borrás and Grimes, and that one of ordinary skill in the art would not assert that such a combination teaches or suggests Appellants’ claimed invention. Thus, Appellants’ attorney submits that dependent claims 2 and 17 are allowable over Tayloe, Borrás and Grimes.

III. CONCLUSION

In light of the above arguments, Appellants' attorney respectfully submits that the cited references do not anticipate nor render obvious the claimed invention. More specifically, Appellants' claims recite novel physical features which patentably distinguish over any and all references under 35 U.S.C. §§ 102 and 103.

As a result, a decision by the Board of Patent Appeals and Interferences reversing the Examiner and directing allowance of the pending claims in the subject application is respectfully solicited.

Respectfully submitted,

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By their attorneys,

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